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Reassessing the Full Clinical Picture of ADHD

ReachMD Announcer:

This medical industry feature, titled “Reassessing the Full Clinical Picture of ADHD,” is sponsored by Otsuka.

Here’s your host, Dr. Charles Turck.

Dr. Turck:

This is ReachMD and I’m Dr. Charles Turck, and joining me today to discuss attention-deficit hyperactivity disorder, also called ADHD, is Dr. Ann Childress. She is the President of the Center for Psychiatry and Behavioral Medicine in Las Vegas, Nevada. Dr. Childress, welcome to the program.

Dr. Childress:

Thank you, I’m happy to be here.

Dr. Turck:

Before we begin, let’s take a moment to set the stage for today’s conversation. Dr. Childress, why is it so important that we take a deeper look at the full clinical picture when it comes to ADHD?

Dr. Childress:

That’s such an important question. When we focus only on core symptoms listed in the diagnostic criteria, we risk missing key aspects of a patient’s experience with ADHD. What we’ve come to understand is that looking at the full clinical picture—including associated features and common comorbidities—is essential to effective disease management.¹ So, taking that broader perspective not only helps us make more accurate assessments, but it also allows us to develop treatment plans that are more personalized and relevant to each patient. And when treatment aligns with a patient’s specific needs, we’re much more likely to see better engagement and improved outcomes.

ReachMD Announcer:

Chapter 1: Understanding ADHD as a Multidimensional Disorder

Dr. Turck:

So, Dr. Childress, let’s dive right in. How prevalent is ADHD, and when do symptoms typically manifest?

Dr. Childress:

So, ADHD symptoms usually present during childhood, and 60 percent of those patients continue to experience symptoms into adulthood.²⁻⁴ In the United States alone, 15.5 million adults—so around six percent of the population—and 6.5 million children and adolescents, or 10.5 percent of the population, are estimated to have ADHD.^{5,6} Historically, the focus on ADHD has been centered around how it impacts children and adolescents, especially in terms of behavior and academic performance.⁶ But the fact that we see ADHD across all age groups shows that it’s not just a childhood condition.^{5,6} Many individuals continue to experience symptoms into adulthood, where it can affect everything from focus and organization to executive function and emotional regulation.^{1,2} And while ADHD tends to follow a relatively stable course over time, many childhood cases continuing into adolescence and adulthood for both males and females, the way symptoms show up can be quite different from person to person.^{3,4}

Dr. Turck:

Now, many people think of ADHD as a disorder of inattention, hyperactivity, and impulsivity.¹ And while these are the core symptoms of

ADHD, how do associated features like emotional dysregulation and executive dysfunction shape the quality of life of people with ADHD?

Dr. Childress:

You're right, those are the core symptoms, but there's much more to the picture.¹ Let's start by defining two key associated features of ADHD that often don't get enough attention: emotional dysregulation and executive dysfunction.

Emotional dysregulation is when someone has a really hard time managing their emotional responses, experiencing things like mood swings, frustration, or overreaction to small stressors.^{7,8} Actually, about two-thirds of adults with ADHD report struggling with emotional dysregulation, and nearly half of children with ADHD experience it too.^{9,10} And almost half of individuals still struggle with this while on ADHD medications.¹¹ And executive dysfunction, on the other hand, refers to difficulty with planning, organizing, remembering tasks, and staying on top of goals. It's not just forgetfulness; it affects how someone functions across the board.¹²⁻¹⁴ This is very prevalent – it affects nearly 90 percent of children with ADHD, and in adults, it may be just as common as the other core ADHD symptoms.¹⁵⁻¹⁷ Even with treatment, a lot of people—about a third—still deal with it.¹⁸ So both of these are actually pretty common in ADHD.

Emotional dysregulation can make it harder to maintain relationships, succeed at work or school, and just feel in control of day-to-day life.^{7,9} And executive dysfunction can lead to things like lower academic performance, trouble holding down a job, or difficulty managing money and responsibilities.¹⁹⁻²¹ These challenges also lead to serious real-world consequences. People with ADHD have a higher risk of motor vehicle accidents or injuries, criminality, and higher rates of suicide attempts.²²⁻²⁵

And in my experience, overreacting is also a very common symptom. I always say, if you forget something, your boss will probably forgive you, but if you curse them out – you will probably be looking for a new job.

So while the core symptoms remain the key diagnostic criteria, these associated features really shape how ADHD shows up in someone's life. They're a big part of why ADHD can be so challenging—and why treatment needs to look beyond just attention and hyperactivity to address the broader clinical picture.¹

Dr. Turck:

And how do these associated features impact caregivers?

Dr. Childress:

All of these can really take a toll on family and caregivers. They're usually the ones managing social interactions – or avoiding them altogether. They're also coordinating healthcare and advocating for the right educational support.^{26,27} That kind of pressure can cause emotional distress and put a strain on family and work life.^{26,28}

Dr. Turck:

That makes sense. So, could you tell us a bit about the comorbidities associated with ADHD?

Dr. Childress:

Of course. One of the more complex aspects of ADHD is that it often doesn't exist in isolation. In fact up to 50 percent of people with ADHD also experience comorbid psychiatric conditions, such as anxiety.^{6,29-31} And when those conditions show up alongside ADHD, it can make everything more complicated. For example, people who have both ADHD and anxiety often have a harder time at work, may have a more severe clinical picture, and tend to report a lower overall quality of life.^{32,33} In fact, there are higher rates of hospitalization, suicidal behaviors, and susceptibility for anger.³² And because the symptom profiles overlap and the impact on quality of life is similar, it can be easy to misdiagnose or miss a co-occurring condition entirely.³⁴ Sometimes the ADHD gets diagnosed, but the anxiety doesn't. Or the reverse happens. And if you're only treating part of what's going on, it can delay real progress or lead to the wrong kind of treatment altogether.³⁴

I saw a 27-year-old with ADHD who had a lot of physical symptoms indicative of anxiety – sexual dysfunction, back pain, tension headaches, irritable bowel syndrome. Although he wasn't complaining about anxiety, when we queried he met criteria for generalized anxiety disorder. So, it's important to ask about anxiety because ADHD patients present with a lot of physical symptoms, too.

Dr. Turck:

So, coming back to how we opened this conversation, and given the heterogeneity of ADHD, how should clinicians adapt their assessment approach to avoid diagnostic complications and capture the full spectrum of presentation?

Dr. Childress:

Right, as I mentioned before, ADHD isn't a one-size-fits-all condition, and that's exactly what makes it so challenging to diagnose and

manage—it's heterogeneous, so it looks different from person to person.^{3,4}

And because of this variability, clinicians really need to move beyond a checklist approach that focuses only on attention and hyperactivity. During my work on clinical trials, I assess patients more thoroughly. But I don't think most clinicians understand the associated features well and don't have time to assess all of them. Instead, assessment should be more comprehensive, looking at:

- emotional and executive function difficulties,¹
- common comorbidities like anxiety³⁴
- and the ways symptoms are impacting real-world functioning—in work, school, relationships, and daily life.^{7,9,19-21,32}

This broader approach not only helps capture the full clinical presentation of ADHD, but also leads to more effective, individualized treatment plans. After all, what works for one person with ADHD may not work at all for someone else.

ReachMD Announcer:

Chapter 2: Unpacking the Neurobiology of ADHD

Dr. Turck:

Let's shift gears now and consider the complexity of ADHD through a neurobiological lens. Do you think it's time we expand our understanding of neurotransmitters and the pathways involved in ADHD's underlying biology?

Dr. Childress:

Yes, when we talk about ADHD, dopamine and norepinephrine usually get most of the spotlight—and that makes sense.

- Dopamine is tied to movement, mood disorders, attention, learning and memory, and reward processing.³⁵
- Norepinephrine also helps with attention, as well as arousal signal-to-noise processing, mood regulation, and stress response.³⁵

These are the core symptoms of ADHD, so it makes sense that these neurotransmitters have been a big focus in both research and treatment when developing stimulants that target those systems.³⁶ But what's often missing from the conversation is serotonin—it's a big piece of the puzzle that's starting to get more attention.^{36,37} Serotonin affects things like mood, perception, appetite, aggression, anxiety, and reward processing—all of which can be disrupted or show up as common comorbidities in people with ADHD.³⁷ And since we know that ADHD isn't just about focus or hyperactivity but also emotional dysregulation and executive dysfunction, it makes sense that serotonin might be apart of the picture too.¹

Growing evidence suggests that dysregulation of serotonin signaling, particularly in the prefrontal cortex and amygdala, may contribute to ADHD by affecting impulse control, mood regulation, and emotional stability.^{37,38} We also know that serotonergic neurons innervate much of the central nervous system, including the prefrontal cortex and striatum, both of which are key areas involved in the neurobiology of ADHD.³⁹

Dr. Turck:

So, Dr. Childress, given that context, how does the interplay between neurotransmitters help explain the wide variability in how ADHD presents from one person to another?

Dr. Childress:

A big part of that variability may come down to the interplay between dopamine, norepinephrine, and serotonin. No two people with ADHD have exactly the same neurochemical profile. One person might have more issues tied to dopamine, while another might have serotonin-related challenges like mood instability or anxiety.^{36,40} On the flip side, it's also important to understand that these neurotransmitter systems are interconnected—so an imbalance in one can affect the others. This also helps explain the wide range of ADHD presentations, from a hyperactive child to an adult dealing with more focus and emotional regulation.^{35,36} And that's exactly why we need to consider this neurobiological complexity into both clinical assessment and treatment.

ReachMD Announcer:

Chapter 3: Rethinking the Approach to ADHD Treatment

Dr. Turck:

Now, Dr. Childress, there are currently a few medications on the market that treat ADHD, but how effective are they in addressing the broader challenges patients face in daily life?

Dr. Childress:

Well, many of the stimulants on the market have been shown to be effective at addressing the core ADHD symptoms, like inattention and hyperactivity, by targeting dopaminergic and noradrenergic pathways.^{35,36} But less than 30 percent of individuals report they are fully satisfied with their current stimulant therapy.⁴¹ And retrospective claims analyses using IBM MarketScan data from 2014 to 2018 looked at nearly 80,000 children and adolescents and around 123,000 adults with ADHD. In each study, over 90 percent of these patients started out on stimulants.^{42,43} For Children, within the first year, 59 percent had a change in their treatment, and about 21 percent stopped their medication altogether.⁴³

When the researchers focused just on adolescents, the numbers were even higher. About two-thirds had some kind of treatment change within 12 months, and third discontinued medication, and strikingly, 33.5 percent of those who stopped did so within the very first month.⁴³ In adults too, about 50.2 percent of patients had a treatment change in seven months. 22.5 percent of patients discontinued, and nearly 45 percent of those who discontinued did so in the first month.⁴²

Dr. Turck:

Well that's interesting. What might be contributing to these persistent symptoms and treatment dissatisfaction?

Dr. Childress:

One reason for this may be that we're not addressing the full neurochemical landscape of ADHD. And that may contribute to why so many people, even on treatment, continue to experience residual symptoms of emotional dysregulation and executive dysfunction.^{1,11,44,45} What's more, nearly half of patients continue to struggle with emotional dysregulation, and over a third report ongoing executive function deficits, like problems with organization, planning, and follow-through, while taking medication.^{11,18,49} So we might be missing the broader neurochemical picture.

Another big challenge is side effects. 95 percent of adults on ADHD medications in the U.S. report experiencing at least one ongoing symptom or treatment-related adverse effect. These can include sleep issues and mood swings.¹¹ And individuals with comorbidities such as anxiety may show lack of improvement or even worsening anxiety symptoms while treating their ADHD.^{11,41,49,50} These treatment side effects negatively affect quality of life and can also contribute to poor adherence.^{41,49} Actually, two thirds of patients end up switching treatments within a year, which points to a lack of sustained satisfaction or effectiveness.^{11,51,52}

Dr. Turck:

So with that in mind, what would an integrative, neurobiologically aligned treatment approach for ADHD look like in clinical practice?

Dr. Childress:

Providers should look beyond just targeting the core symptoms of inattention, hyperactivity, and impulsivity and take into account the full spectrum of the disorder.⁴⁰ So making sure to:

- Consider all three neurotransmitter systems—dopamine, norepinephrine, and serotonin—to better address core and associated symptoms,⁴⁰
- Actively screen for and treat comorbid psychiatric conditions like anxiety,³⁴
- And use a personalized approach, since the neurobiological profile and symptom presentation can vary from one individual to another.^{3,4}

And I believe asking about associated features at the initial visit and following those symptoms at subsequent visits is important. We need to identify comorbid symptoms and make sure we assess changes at follow-up visits to ensure that we're making treatment adjustments.

Dr. Turck:

With those final thoughts in mind, I want to thank Dr. Ann Childress, for helping us better understand the neurobiology and treatment of ADHD.

Dr. Childress, it was great speaking with you today.

Dr. Childress:

Thank you!

Dr. Turck:

For ReachMD, I'm Dr. Charles Turck.

ReachMD Announcer:

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